Math 131 - February 26, 2016

Warm-up Problems

1. Let $f(t) = t^3 - 6t^2 + 9t$. Fill out the table:

t	-1	0	1	2	3	4	5	6
$f(t)$								

2. Let $f(t) = t^3 - 9t^2 + 15t$. Fill out the table:

t	-1	0	1	2	3	4	5	6	7
$f(t)$									

Lecture Problems

3. (a) $y = (x+3)^3(x-4)^2$. $y' =$

   (b) $y = \dfrac{x^5}{(1-10x)\sqrt{x^2+2}}$. $y' =$

4. Let $f(t) = t^3 - 9t^2 + 15t$ be your position at time t.

   (a) $f'(t) =$

   (b) $f''(t) =$

   (c) Find all t values where $f'(t) = 0$.

   (d) Find all t values where $f''(t) = 0$.

   (e) Describe what is happening with whatever it is that is moving.

   (f) Plot a graph of f, f' and f''. Describe the motion of the particle using the graph.